

AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended): Device for controlling the temperature of fluids circulating in a heat engine-(12) vehicle, of the type comprising a circuit-(10) in which a heat-transfer liquid circulates for cooling the heat engine-(12) and at least one heat-transfer liquid / fluid to be regulated heat exchanger-(14, 16), ~~characterized in that~~which it is intended to control the temperature of first and second fluids formed by lubricating oil of the heat engine of the vehicle and by recirculated exhaust gases, respectively, ~~and in that it~~wherein said device comprises:

- a first heat-transfer liquid / lubricating oil exchanger-(14),
- a second heat-transfer liquid / recirculated exhaust gases exchanger-(16),

the first and second exchangers-(14, 16) being connected to a same heat-transfer liquid circuit-(10).

2. (Currently amended): Device for controlling the temperature of fluids according to claim 1, wherein the heat-transfer liquid circuit-(10) is connected to a heat source or to a heat sink (18).

3. (Currently amended): Device for controlling the temperature of fluids according to claim 2, wherein the heat source or the heat sink-(18) comprises heat storage means-(18) that can exchange heat with the heat-transfer liquid, in particular during a heating mode, in which the heat

from the storage means~~(18)~~ is transferred to the heat-transfer liquid, and during a regeneration mode, in which the heat from the heat-transfer liquid is transferred to the storage means~~(18)~~.

4. (Currently amended): Device for controlling the temperature of fluids according to claim 3, wherein the heat storage means~~(18)~~ comprise a chemical compound that stores or releases heat energy by changing phases.

5. (Currently amended): Device for controlling the temperature of fluids according to ~~any of claims 2 to 4~~claim 2, wherein the two exchangers ~~(14, 16)~~ and the heat source or the heat sink ~~(18)~~ are connected in series in the heat-transfer liquid circuit~~(10)~~, in the order: heat source or heat sink, heat-transfer liquid / oil exchanger~~(14)~~, heat-transfer liquid / recirculated exhaust gases exchanger~~(16)~~, considering the direction of circulation of the heat-transfer liquid in the circuit ~~(10)~~.

6. (Currently amended): Device for controlling the temperature of fluids according to ~~any of claims 1 to 5~~claim 1, wherein the heat-transfer liquid circuit~~(10)~~ comprises derivation means ~~(23)~~ from the heat-transfer liquid / oil exchanger~~(14)~~.

7. (Currently amended): Device for controlling the temperature of fluids according to claim 6, wherein the derivation means~~(23)~~ from the heat-transfer liquid / oil exchanger~~(14)~~ comprise a derivation branch~~(24)~~ from the heat-transfer liquid / oil exchanger~~(14)~~ and a three-way valve~~(26A)~~ comprising first and second channels of the same signs connected, one to

the exchanger-(14), and the other, to the derivation branch-(24) from the heat-transfer liquid / oil exchanger-(14), and a third channel of the sign opposed to that of the former connected to the circuit-(10).

8. (Currently amended): Device for controlling the temperature of fluids according to claim 6, wherein the derivation means-(23) from the heat-transfer liquid / oil exchanger-(14) comprise a four-way valve-(26B) comprising two channels of opposed signs connected to the heat-transfer liquid / oil exchanger-(14) and two channels of opposed signs connected to the heat-transfer liquid circuit-(10).

9. (Currently amended): Device for controlling the temperature of fluids according to ~~any of claims 2 to 8~~ claim 2, wherein the heat-transfer liquid circuit-(10) comprises derivation means (27) from the heat source or from the heat sink-(18).

10. (Currently amended): Device for controlling the temperature of fluids according to claim 9, wherein the derivation means-(27) from the heat source or from the heat sink-(18) comprise a derivation branch-(28) from the heat source or from the heat sink-(18) and a three-way valve-(30A) comprising first and second channels of the same signs connected, one to the heat source or to the heat sink-(18), and the other, to the derivation branch-(28) from the heat source or from the heat sink-(18), and a third channel of the sign opposed to that of the former connected to the circuit-(10).

11. (Currently amended): Device for controlling the temperature of fluids according to claim 9, wherein the derivation means ~~(27)~~ from the heat source or from the heat sink ~~(18)~~ comprise a four-way valve ~~(30B)~~ comprising two channels of opposed signs connected to the heat source or to the heat sink ~~(18)~~ and two channels of opposed signs connected to the heat-transfer liquid circuit ~~(10)~~.

12. (Currently amended): Device for controlling the temperature of fluids according to ~~any of claims 1 to 11~~ claim 1, wherein the heat-transfer liquid circuit ~~(10)~~ comprises derivation means ~~(31)~~ from the engine ~~(12)~~.

13. (Currently amended): Device for controlling the temperature of fluids according to claim 12, wherein the derivation means ~~(31)~~ from the engine ~~(12)~~ comprise a derivation branch ~~(32)~~ from this engine ~~(12)~~ and a three-way valve ~~(34A)~~ comprising first and second channels of the same signs connected, one to the engine ~~(12)~~, and the other, to the derivation branch ~~(32)~~ of this engine ~~(12)~~, and a third channel of the sign opposed to that of the former connected to the circuit ~~(10)~~.

14. (Currently amended): Device for controlling the temperature of fluids according to claim 12, wherein the derivation means from the engine ~~(12)~~ comprise a four-way valve ~~(34B)~~ comprising two channels of opposed signs connected to the engine ~~(12)~~ and two channels of opposed signs connected to the circuit ~~(10)~~.

15. (Currently amended): Device for controlling the temperature of fluids according to ~~any~~
~~of the preceding claims~~claim 1, wherein the heat-transfer liquid circuit ~~(10)~~ is connected
additionally to heat exchange means ~~(20)~~ between the heat-transfer liquid and the air of a
passenger compartment of the vehicle.

16. (Currently amended): Device for controlling the temperature of fluids according to ~~any~~
~~of the preceding claims~~claim 1, wherein the heat-transfer liquid circuit is connected additionally to
an electric pump ~~(38)~~ capable of circulating the heat-transfer liquid in at least a portion of the
circuit ~~(10)~~, in particular when the engine ~~(12)~~ is off.

17. (Currently amended): Method for controlling the temperature of fluids implemented by
the device according to ~~any of the preceding claims~~claim 1, ~~characterized in that it~~which
comprises the following steps:

- raising the temperatures of the oil ~~(TH)~~ and of the heat-transfer liquid ~~(TL)~~ and
determining whether the temperature of the oil ~~(TH)~~ is lower than a predetermined
temperature ~~(T)~~ (first condition),
- if this first condition ~~(40)~~ is met, determining whether the temperature of the heat-transfer
liquid ~~(TL)~~ is higher than the temperature of the oil ~~(TH)~~ (second condition),
 - If the second condition ~~(42)~~ is met, adjusting ~~(44)~~ the amounts of the heat-transfer
liquid and of the oil circulating in the exchanger ~~(14)~~ so as to promote heating of
the oil through heat exchange with the relatively hot heat-transfer liquid,

- If the second condition-(42) is not met, adjusting the amounts of the heat-transfer liquid and of the oil circulating in the exchanger-(14) so as to avoid or minimize the heat exchange between the oil and the relatively cold heat-transfer liquid,
- if the first condition-(40) is not met, adjusting-(44) the amounts of the heat-transfer liquid and of the oil circulating in the exchanger-(44) so as to promote cooling of the oil.

18. (Currently amended): Method for controlling the temperature of fluids implemented by the device according to claim 3, ~~characterized in that it~~which comprises circulating the heat-transfer liquid both in the heat-transfer liquid / recirculated exhaust gases exchanger-(16) and in the heat storage means-(18), and this independently from the operation in heating mode or in regeneration mode of these storage means-(18).

19. (Currently amended): Method for controlling the temperature of fluids implemented by the device according to ~~claims 3 and 15 taken together~~, ~~characterized in that it~~claim 3, wherein the heat-transfer liquid circuit is connected additionally to heat exchange means between the heat-transfer liquid and the air of a passenger compartment of the vehicle, wherein said method comprises, the heat storage means-(18) being in regeneration mode and the engine-(12) being on, adjusting the amount of the heat-transfer liquid circulating in the heat storage means-(18) so as to avoid or minimize the heat exchange between the heat storage means-(18) in the regeneration mode and the heat-transfer liquid.

20. (Currently amended): Method for controlling the temperature of fluids implemented by the device according to ~~claims 3 and 15 taken together, characterized in that it~~claim 3, wherein the heat-transfer liquid circuit is connected additionally to heat exchange means between the heat-transfer liquid and the air of a passenger compartment of the vehicle, wherein said method comprises, the heat storage means-(18) being in heating mode and the engine-(12) being off or operating at idle speed after a period at a higher speed:

- if at least one condition among a first category of condition(s) is met, adjusting the amount of heat-transfer liquid circulating in the heat storage means-(18) so as to avoid or minimize the heat exchange between the heat storage means in the heating mode and the heat-transfer liquid,
- if at least one condition among a second category of condition(s) is met, adjusting the amount of heat-transfer liquid circulating in the heat storage means-(18) so as to promote heating of the heat-transfer liquid through heat exchange with these storage means-(18).

21. (Currently amended): Method for controlling the temperature of fluids according to claim 20, wherein the first category of condition(s) comprises a voluntary order to turn off the engine-(12) by a user.

22. (Currently amended): Method for controlling the temperature of fluids according to claim 21, wherein the second category of condition(s) comprises an order to turn off the engine -(12) by a computer of the vehicle, a triggering of emergency lights of the vehicle accompanying turn-off of the engine -(12), a dysfunction of the vehicle necessitating turn-off of the engine -(12),

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and an order to heat the air of the passenger compartment in anticipation of start-up of the engine
(12).